THE OPTICAL
MAGIC LANTERN
JOURNAL
AND
PHOTOGRAPHIC ENLARGER.

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CONTENTS.

PAGE.
Notice 41
Notes 41
The Magic Lantern: Its Construction, Illumination, Optics, and Uses (chap. 6) 42
A Startling Optical Novelty ... 44
A Novel Means of Changing Slides in a Single Lantern ... 44
A Lantern Association 45
Flashes on Lantern Topics ... 45
Advice to whom it Concerns ... 46
Dark Rooms 46
Editorial Table 46
Correspondence... 47
Lantern Carrier... 48
Camera-Club Notices 48
Notes and Queries 48

CONTENTS OF No. 5.

Notes—The Magic Lantern: Its Construction, Illumination, Optics, and Uses (chap. 5)—To Ascertain the Candle-Power of a Light—Two Hints to Workers with the Lantern—Lanterns & Accessories—III.—A New Limelight—Wanted, a Dark Room—How I make Lantern Transparencies—Renovating Battered Lanterns—Editorial Table—Applications for Patents, 1889—Correspondence—Camera-Club Notices—Selections—Notes and Queries.

Notices.

THE *Optical Magic Lantern Journal and Photographic Enlarger* is issued on the 15th of every month, price One Penny, and may be obtained from all Newsvendors, Railway News Stalls, Photographic Dealers, or from the Publishers, at the following rates, post free:—

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Advertisements must reach the office not later than the 12th of each month. All cheques and postal orders to be made payable to Taylor Brothers.

Editorial communications must be addressed, The Editor; advertisements and business communications to Taylor Brothers, care of the Publishers, Dorset Works, Salisbury Square, Fleet Street, London, E.C.

Notice.

AT the commencement of the new year it is our intention to publish this journal on the 1st instead of the 15th of the month. This alteration will take place on January 1, 1890.

Notes.

No. 1 of *Photographic Answers* has recently been issued, notice of which appears in another column.

* * *

THE exhibition in connection with the Photographic Society of Great Britain has been a brilliant success, one of the attractions being the exhibition of photographs by means of the optical lantern, on which occasions the hall was literally crowded.

* * *

A PATENT was lately granted to Mr. W. P. Adams relating to the substitution for glass of a flexible and transparent support for the picture, in slides used with an optical lantern. Views are printed on "transferrotype paper," then transferred to glass, thence to a specially prepared gelatine. This gelatine support is wound on roll-holders and placed in position in front of the condenser, where it can be wound from one roller to another, and each picture brought into view in succession.

* * *

SOME very novel improvements, in which the lantern plays a prominent part, have recently been made, and it seems probable that in years to come, we shall, by the aid of photography, the phonograph, and the optical lantern, be able to hear and see the facial expression accompanying recitations and songs uttered by our artists of the present day. We may then expect to find in dealers' catalogues such entries as:—"The Bay of Biscay" cylinder for the phonograph, with set of facial expression slides of Mr. ——, as sung by him at the Albert Hall, in 1889.

The Magic Lantern: Its Construction, Illumination, Optics & Uses.

CHAPTER VI.—THE TANK.

Numerous objects—besides photographic and hand-painted slides—may be exhibited by the optical lantern. Among these many chemical experiments may be shown by means of a tank, with which it is at present our object to deal. With it an ever-varying set of experiments can be conducted; and a lantern outfit cannot be said to be complete without this adjunct.

A water tank is by no means a difficult thing to construct, wood, glass, and india-rubber piping being most that is required.

In order to make one, select two pieces of wood, eight inches long, four inches wide, and five-sixteenths of an inch thick; and at the middle of each cut a hole three inches in diameter; after which cut away the wood surrounding this hole for a distance of about a quarter of an inch, so that the borders of the first-mentioned one will form a shoulder for the part afterwards cut away, the larger aperture being cut to the edge of the piece of wood in such a way that when the two slabs of wood are fastened together, a tank without sides is formed.

Two pieces of glass are cut, of a size that will just admit of their being dropped into position; these are kept distended by means of the insertion of a piece of india-rubber tubing, bent horse-shoe form, which, while keeping them distended, forms at the same time a water-tight compartment.

The tank is now finished, and is capable of holding liquid. It presents the appearance shown by Fig. 23.

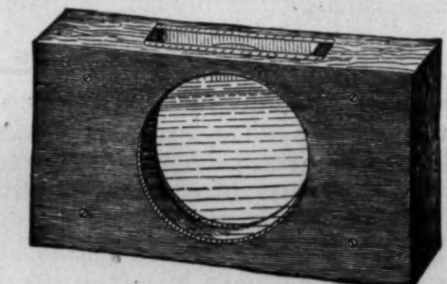


Fig. 23.

The ingenuity of the reader will suggest other means of forming a tank, or, if preferred, it may be purchased at a reasonable figure from any dealer in lantern apparatus. It is preferable that the front of the lantern with which the tank is to be used should be open at the top, as in Fig. 24.

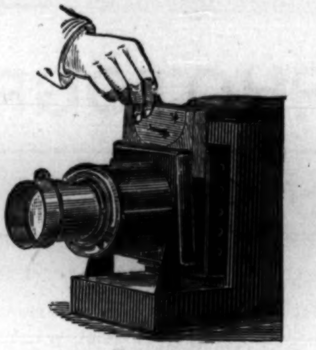


Fig. 24.

As the opening of this tank will be in a somewhat confined space when it is placed in the lantern, it becomes necessary to use a pipette (Fig. 25) for introducing anything of a fluid nature. For other purposes a pair of tweezers will be found to be advantageous.

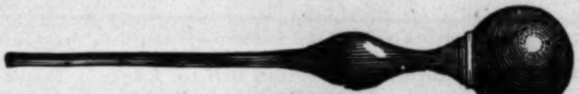


Fig. 25.

The following are a few of numerous interesting experiments which may be shown upon the screen by the aid of the tank.

(A) Place into the tank a solution of blue cabbage, and by means of the pipette add a few drops of diluted sulphuric acid; the blue colour will gradually change to a red. If a little ammonia be added the colour will again be changed to blue. If more alkali be added, the solution, when stirred, will present a green appearance, and if a little acid is again added to this, and the solution stirred, it will at first become blue, and finally red.

(B) The same experiment may be repeated in a different manner. Partly fill the tank with water, slightly coloured with tincture of blue cabbage; to this slowly add a small quantity of liquid ammonia, in such a manner as not to mix it; then, by inserting the jet of the pipette to the bottom of the tank, add a small quantity of sulphuric acid. The effect upon the screen will be green at the bottom, purple in the middle, and crimson at the top. If the solution be stirred slightly the colour will become red, green, or blue, according to the predominance of one or other of the solutions. If, to this, a little liquid chlorine is added, the solution will become clear.

(C) Place in the tank a very weak solution of nitrate of copper; this will appear quite clear, but upon the addition of one or two drops of ammonia it will strike a deep blue colour. The addition of nitric acid will immediately cause the colour to disappear.

(D) Partly fill the tank with methylated spirits, then carefully place a drop of aniline dye upon the surface of the alcohol. A peculiar effect takes place—the dye descends in the tank for a short distance, then divides in two; each part again descends and again separates, as before; and this continues to go on until the bottom of the tank has been reached. When seen upon the screen the effect will present an appearance of a reversed character, and a coloured tree will apparently grow upwards, each branch becoming subdivided in its upward growth. (See A, Fig. 25.) The effect of this experiment is greatly enhanced if various coloured dyes be used side by side simultaneously, the co-mingling of the branches having a most striking appearance.

(E) If paraffin oil is used instead of alcohol, and coloured fusel oil in place of the dye, the formations will present the appearance of B. (Fig. 25.)

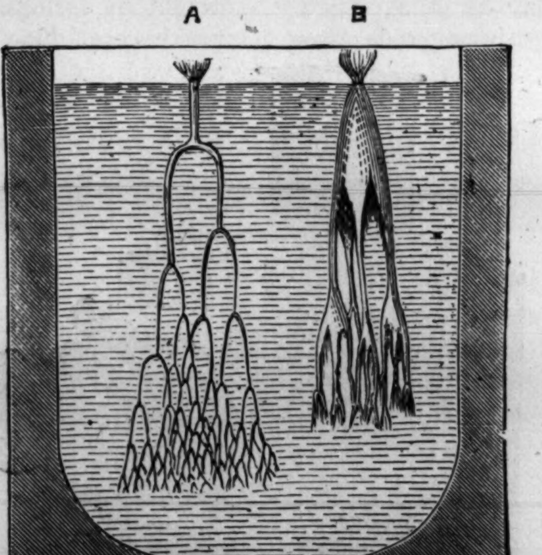


FIG. 25.

(F) The appearance of a shower of bullets may be presented upon the screen if the tank is filled with dilute sulphuric acid, and a small piece of zinc dropped into it. The generation of the bubbles of hydrogen will, upon the screen, appear as bullets of all sizes.

(G) Beautiful streamers may be produced upon the screen if a crystal of oxalic acid is suspended in the tank containing hard water.

(H) An attractive subject on the screen is a volcanic mountain, from which volumes of smoke are apparently emitted. This is done by filling the tank with water, and suspending in it a piece of zinc, shaped to represent a mountain, the top of which must hang downwards. Previously to placing the zinc in position, a piece of piping, with a small outlet, must be soldered down the side of the zinc mountain, its orifice being at the summit.

In order to cause the *smoke* to appear it is only necessary to place a drop or two of ink in the tubing, when the appearance of a volcano in full play will be presented. A crystal of permanganate of potash dropped into the tube will also produce the effect of smoke, and it possesses the advantage of being longer in duration.

(I) Many pretty effects may be produced upon the screen by the aid of a small battery in conjunction with the tank. The electrodes should be made of very thin platinum. Fill the tank with a solution of acetate of lead, and place the two wires from the battery down each side of the tank. As soon as a weak current of electricity is passed, a leaden tree will form at one of the poles, and gradually lengthen out towards the other pole.

(J) Having filled the tank with a solution of sulphate of soda, coloured with an infusion of red cabbage, which imparts a purple colouration, divide the tank into three vertical compartments, by pushing into it two pieces of porous cardboard. Now pass an electric current through the solution, as in the last-mentioned experiment, the two wires being in the outer divisions. The acid discharged from the one pole changes the colour of that division to *red*, while the alkali from the other pole will cause the production of a bright *green* colour. When the current is reversed the colour will gradually change places, that in the centre division remaining of the original purple colour.

A young smelt, by reason of its thin transparent nature, forms an attractive subject when placed in the tank and projected upon the screen, and will be found to be of great interest.

The insertion of many small objects into the tank will readily suggest themselves to the operator, such as a spider to represent an octopus or a stickleback for a whale.

A Startling Optical Novelty.

PHOTORAMIC AND PHONO-PHOTORAMIC EFFECTS.

It would doubtless seem strange if upon a screen a portrait (head) of a person were projected, and this picture slowly became of an animated character, opened its mouth, and began to talk, accompanied by an ever-changing countenance, including the formation of the mouth as each peculiar sound is uttered; or if, instead of one head, two were produced, and an argument gone through with all the turns and twists of the head incidental to such.

It would also appear curious to have a street scene depicted on the screen, and for the spectators to witness the various horses and vehicles running past in all directions, persons walking to and fro, and dogs running along, all at varying speeds and with life-like motion, and not go past in a gliding manner—all this not as silhouettes, but with all detail.

Strange as all this may seem, it is now an accomplished fact, and the optical lantern will shortly be considered a *sine qua non* as a recording instrument.

Imagine the sensation that would be produced if the whole of the recent Lord Mayor's Show were to be presented upon a screen exactly as seen by a person stationed at one particular point looking across the street. The houses on the opposite side would remain stationary, and the procession would pass along, each minute movement, as it actually took place at this given point, being represented.

The name of Friese Greene, the eminent photographer of Brooke-street, W., will become familiar throughout the land in connection with an invention by which all these effects can be produced. He has invented a peculiar kind of camera—to outward appearance not unlike an American organette, handle and all, about one foot square.

This instrument is pointed at a particular moving object, and by turning the handle several photographs are taken each second. These are converted into transparencies, and placed in succession upon a long strip, which is wound on rollers and passed through a lantern of peculiar construction (also the invention of Mr. F. Greene), and by its agency projected upon the screen.

When the reproduction of speech is also desired, this instrument is used in conjunction with the phonograph.

In our next issue we hope to be able to give full particulars, with drawings of this wonderful instrument, or rather combination of instruments.

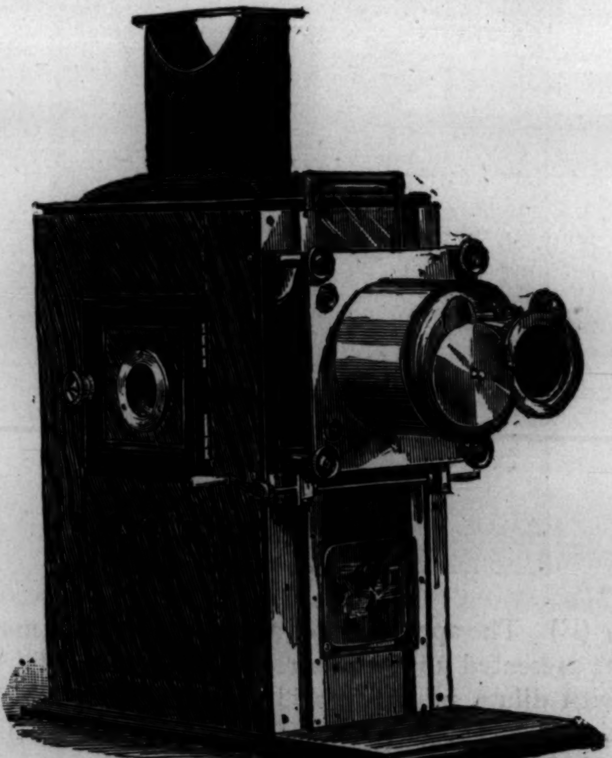
We have seen and examined the camera, and can vouch for its doing all that is here stated.

A Novel Means of Changing Slides in a Single Lantern.

A new form of lantern slide changer is about to be placed upon the market by numerous dealers, the changer and lantern being combined. A patent No. 12,860 has been obtained by Mr. Alfred Wrench, by whom his form of lantern has been named *The Terpuoscope*.

It is furnished with an automatic slide carrier and a rolling curtain effect, the working of which is as follows:—

Before the entertainment commences, a photographic slide is placed in the grooves, under the front tubes, as will be seen from the cut, and is by a single turn of a rack and pinion smoothly and quickly sent up into its place, where it is caught by springs and properly centered. No sooner has this been done than the black curtain, by which the screen was obscured, is raised up, showing a picture. While this is being ex-



hibited, another photograph is placed in the grooves under the front tubes previously occupied by the first one. By another turn of the handle the curtain descends, and shuts out the view, only to rise again immediately to disclose the second picture now on the screen, the first one having been removed by the same action. This automatic action goes on all through the entertainment, and no motion of the slides is seen on the screen, as the substitution of the one picture for another is made during the momentary descent of the curtain.

But in addition to this movement, the inventor has so constructed it that mechanical, or similar slides, chromotropes, &c., in wooden frames can also be introduced at any time during the entertainment, or between the exhibition of two series of views, and such mounted slides can also be exhibited one after another, with the curtain effect in the same way as the photographic slides.

A Lantern Association.

In another column attention is called by Mr. T. H. Holding to the desirability of forming a lantern association in London.

There are many who have lanterns who would highly prize the means of gaining the necessary knowledge of how to manipulate a lantern to advantage, and there are also many who would appreciate the opportunity of giving a short lecture in public, so as to gain confidence in themselves in case that at any time they were called upon to fill such a position, either as a means of amusement or profit.

There are various *lines* upon which an association of this nature may be run, one being that the members draw lots as to who shall manipulate the lantern and describe the slides; the other members, if necessary, contributing slides and giving a friendly criticism upon the doings of the operator, &c. It would, of course, add to the general interest if members were permitted to bring their friends at stated times. We shall be pleased to hear what our readers have to say upon the subject, and perhaps the London Lantern Association may be something in the near future.

Flashes on Lantern Topics.

Turning my shiner over the recent applications for patents, I note the resuscitation of an old acquaintance, and, if I mistake not, it is by the same person—at least the name, Mr. Malloch, is the same. The number is 14,701; the date September 18, 1889; and the claim is for the use of "A glass plate or other transparent substance coated with a non-actinic film, and used as a negative for photographic and other purposes."

Now, if any reader takes the trouble to look at my last "Flash" in No. 3, it will be seen that this identical thing is there described as being the work—I do not say the invention—of the late Dr. Strethill Wright, M.D., F.R.S.E., &c., for positives and for use as lantern slides. Of course they could have been, and were, used as negatives for silver prints, and therefore for any other kind of print.

A further and fuller statement on this subject may be desirable. Many years ago—more than twenty—a Mr. Malloch, who was not a member, applied through the proper quarter for liberty to show something new in this particular way at a meeting of the Edinburgh Photographic Society. The Council granted the application, stipulating as provided by the rules, that the favour should not be used for advertising purposes. On the communication being made, and the examples shown, they were found to be wretched drawings on soot-covered plates, miserably executed in all respects. He was then and there informed of the Doctor's work in the same direction as things he had done several years before. If I remember well, the gentleman lost his temper. So much for that part of the question.

I might, if I had thought it of any consequence, have been more circumstantial in my last "Flash," which fortunately was printed before the patent was applied for. It may be added here that the soot-covered glass does not take the thin varnish very readily, but this is easily overcome by either flooding it with spirit of wine (methylated), or by dipping it in a flat bath thereof till the dry black is saturated. After draining off the surplus, it will take the varnish quite easily.

As a further outcome of this matter, it may be stated that Mr. Norman Macbeth, R.S.A. (portrait painter), showed a number of etchings he had amused himself with making on dry collodion plates prepared for photographic use. His method was to use either a hard pen with the half nib broken off, or a needle fixed in a handle, and these of various degrees of fineness used as etching needles. From the fact of Mr. Macbeth having been trained as an engraver, and being in addition an accomplished artist, it may be guessed they were well and beautifully executed. The method was to lay the prepared plate on black paper during the working. A difficulty occurred in printing through some of the plates not being sufficiently opaque; but at my suggestion they were treated by Mr. Cary Lea's method of intensifying. This proved so successful that I transferred several of them to the lithographic stone and got them printed, and they were a great success. An attempt was also made successfully to get slight half-tones by scraping and otherwise treating the film and the stone. This, I think, if Mr. Malloch should see it, ought to make him pause before completing his specification.

There are at least two of the first rank of artists now in London, Mr. Charles Ed. Johnson and Mr. Robert Macbeth, A.R.A. (son of Norman), who practised this method of etching at the time Mr. Norman Macbeth introduced it, to whom, if to any one, is due the credit of first using such films and methods for photographic and other purposes. BULL'S-EYE.

Advice to whom it Concerns.

THE summer is over, and now that the long evenings have come many find it hard to pass the time. My advice to those who are troubled that way is to learn to make lantern slides, and to indulge in a lantern, and then, if he should happen to be a happy father, he will find he can give pleasure to himself and his children.

There are various ways of making slides, either from negatives or from illustrations. Perhaps the best way to amuse children is for one to take a piece of glass 3¼ by 3¼ inches, and coat it with varnish, and then with a fine pen draw any funny picture he may fancy on it, and show it on the screen.

Certainly every one should go in for lantern showing, and give pleasure to one's friends. For those who are quite new at lantern work, I say, go in for the new paper "The Optical Magic Lantern," and learn how to do it; by so doing he will get any amount of *tips*, and be able to see in the advertisements where he can procure a lantern and slides, and, in fact, get all the information he requires. Anyway, such are my sentiments.

A. R. DRESSER.

Dark Rooms.

I READ with pleasure the account by Mr. Palmer in last issue of this journal, how he constructed a dark room. I quite agree with his remarks, "Many amateurs regard a dark room as being as unattainable as a good studio, instead of which a 'handy' man will find it within the scope of a few hours' work."

As I consider myself a "handy" man, I will describe in as few words as possible how I made my dark room. The copper in our wash-house was not used for family purposes, so I erected a thin hoarding of matched boards in the corner occupied by it, and provided ventilation by an ordinary light-trapping arrangement. As the copper was provided with a tap at the bottom for emptying, I used it as a sink, taking care to wash it out after use; the ledge around it served admirably as a bench.

As there was no running water in my "corner," I at first conveyed it by a rubber tube from the ordinary tap at the sink, but as this was rather inconvenient, I set about other means of obtaining it. Finding that the pipe leading to the kitchen boiler passed at the back of the copper I decided to tap it, but visions of a deluge made me at first dubious about trying it; but I became imbued with a happy thought, and within five minutes I had running water (under control) at hand. I had a small straight tap with a thread cut on it, and reamed out the screw thread end by means of a countersink for screws, which left that end quite sharp, I then secured the opposite end of the tap in the stock of a brace, and screwed it into the leaden water pipe, without spilling so much as a drop of water. I need scarcely remark that this is much handier than having to attach fourteen or fifteen feet of tubing each time I want to use my dark-room. D. L. YRIGOYTI.

Editorial Table.

A NEW catalogue has been issued by Mr. J. R. Gotz, Buckingham-street, W.C. It contains particulars of Suter's aplanatic lenses and photographic specialities manufactured or imported by Mr. Gotz, amongst these being the *Volute* and *Wing* shutters; a patent portable camera susceptible of numerous swing movements; a new tripod stand; gelatine bromide plates, bromide paper, and a variety of other photographic requirements, together with several formulæ.

FROM Mr. E. G. Wood, of Cheapside, E.C., we have received his twenty-third annual catalogue of lanterns, slides, and other apparatus. It contains a full account of the various forms of oil and limelight lanterns in which this firm deal. We have also received particulars of their most recent slide productions, viz., "Wanderings in South and East Africa," "The Rise of English Literature," and "The Norman Conquest." The twenty-ninth edition of this firm's catalogue of photographic sundries is also before the public. The first twenty-six pages of it contain instructions *How to Take a Photograph.*

WE have received the first number of *Photographic Answers.* This new monthly magazine is edited by Mr. E. J. Wall, and is published by Hampton Judd and Co., 13, York-street, Covent Garden, London, W.C. The contents of this number are of a very interesting character. It contains as a frontispiece a fine picture of Miss Ellen Terry, from a negative by Mr. S. A. Walker, of Regent-street. It is the intention to issue each month a complete index to all the English photographic journals for the four weeks preceding its publication. We extend the right hand of fellowship to this new venture, and hope that it may achieve the success which it deserves. The price is one penny.

MR. WALTER GRIFFITHS, Birmingham, has sent us one of his lantern slide-making cameras. This camera is intended for making slides from half-plate negatives, and it answers admirably. All that is necessary is to insert a negative at one end, a sensitised plate at the other, close the sensitive plate end, and expose the instrument to the light. No focussing is required. As a means of making lantern slides it is simplicity itself, and is sold at a very moderate price.

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Correspondence.

CANDLE POWER.

[*To the Editor.*]

SIR,—In the last number of your Journal there is an article on the "Candle Power of a Light," on which I beg to make one or two remarks.

A "candle power" is said to be that of a standard candle, but its value is not stated, viz., a sperm candle of six to a pound, burning at the rate of 120 grains per hour. In accurate photometric experiments the rate of consumption is ascertained by weighing the candle during the experiment, and if it be more or less than 120 grains per hour, the value of the light is increased or diminished accordingly.

In speaking of a deeper shadow being cast by a stronger light, there is a little want of "crispness in the definition," as, with a strong light, the *darkness of the shadow* itself must of necessity be less than with a weaker light, because with the strong light the *shadow* must be more illuminated by light reflected from surrounding objects, although it may appear darker by contrast with the surrounding portion of the screen directly opposed to the light.

It seems not strictly correct to say that the removal of a light from an object makes the shadow less dense, as the shadow does not alter, although an appearance of less density is produced by the surrounding illumination being diminished.

Again, when two lights are compared by contrasting the shadows which they cast, the shadows are each illuminated by the other light. Thus, supposing that at first the strong and the weak light are at the same distance from the screen, the shadow cast by the weak light being more highly illuminated by the strong light looks paler than the shadow cast by the strong one, but will be darkened by the removal of the strong light to a greater distance, until both shadows become equally dark. The same result equalizing the shadows can be obtained by moving the weaker light towards the screen until the shadow from the strong light becomes as pale as that from the weak light.—Yours truly, G. H. SLIGHT.

Lindisfarne, Romford-road, E.

LANTERN ASSOCIATION.

[*To the Editor.*]

SIR,—As a devotee of the lantern I came across your fifth number the other day, and now being aware of your existence, I hope that you can send me your first four numbers, and, in the next place, that you will allow me to have a little say on one or two matters regarding those delightful studies in photography which the lantern enables us to prosecute with pleasure to ourselves and profit to many more deserving folks.

The simple and delightful *modus operandi* of producing slides I believe is destined to become one of the most important branches of the great art; and I agree with your correspondent how much more satisfying to the amateur of limited time is the making of slides to the production of silver prints.

I see there is frequent allusion in your journal to the use of the lantern in connection with Camera Clubs and Photographic Societies. Three years ago this winter I ventured to suggest in the *Photographic News* the desirability of forming a Lantern Club pure and simple. So far as I know the suggestion did not take much root, and I now write to suggest the necessity, now that the lantern is so generally used and acknowledged as a power, that those who possess lanterns, are fond of working them, and wish to perfect themselves as manipulators, as lecturers, and as slide-producers, should club themselves together and form a Lantern Association. And I think they might have fortnightly or monthly exhibitions with great advantage to themselves and others; besides, as is evidenced at the Photographic Exhibition, where the lantern evening draws the largest audience, we might be sure of ourselves getting good companies and good shows of pictures.

I shall be glad if you, or some other persons of influence in the craft, would call together those interested, so that they might float the said club, for I am certain it would "go."—I am, yours very truly,

7, Maddox St., W. T. H. HOLDING.

FADING OF SLIDES.

[*To the Editor.*]

SIR,—I have to congratulate you on your very successful paper, which was much wanted, and seems to satisfactorily fill the requirements of lantern amateurs, &c.

Will you kindly tell me, in your answers to correspondents, whether there is any remedy for photographic slides that are turning white? Can varnish be used to fix them before they turn quite opaque, or have they become worthless? I have a lot of views photographed in Australia, and they are all going "milky."—Yours, &c., L. MOONEN.

8, Fellows-road, N.W.

[The slides have doubtless been intensified with mercury followed by ammonia; at any rate we are aware of slides thus treated that have assumed this appearance. For these, varnish does not prove a protection. We would suggest again placing them in a solution of bichloride of mercury until quite bleached, and then after a thorough washing, transferring them to a bath of sulphide of ammonium very greatly diluted. If this will not restore them, we know of no other means. Probably some correspondent may know of some better method; if so we shall be glad to have his experience.—ED.]

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WHEN using eikonogen for developing transparencies, one drop of a ten per cent. solution of bromide to each ounce of developer, will greatly improve the colour and clearness of the picture.—*A. Cowan.*

Lantern Carrier.

MR. J. W. RAMSDEN, of Leeds, writes : "Respecting my lantern carrier, I don't in the least dispute Mr. C. Ferrero's assertion ; probably similar ideas have occurred to dozens of others. Certainly the want of the carrier existed. My carrier was issued to the dealers for last winter's season, and was reviewed in the *British Journal of Photography*. I find on reference to my joiner's bill that the carrier was first made for me in March, 1888."

Camera-Club Notices.

Monday, Nov. 18th, 8 to 9.30 p.m.—Mr. Roberts will be prepared with the lantern if any member or members send him advice to the Club that they would like to try slides.

Thursday, Nov. 21st, 8 p.m.—Mr. Alfred Maskell, "The Progress of Hydroquinone."

Thursday, Nov. 28th, 8 p.m.—Lantern evening.

Wednesday, Dec. 4th, 8.30 p.m.—Soirée at the Galleries of the Royal Society of British Artists, 6½, Suffolk-street, Pall Mall.

Thursday, Dec. 5th, 8 p.m.—Mr. A. Horsley Hinton, "The Standard of Excellence in our Art."

Notes and Queries.

S. A. W. (Leeds), B. H. M. (Swansea).—Answered by post.

Camberwell.—If you subject the argand lamp to a good boiling with plenty of soda in the water, it will give a better light ; it is necessary that it be kept clean ; a gas argand will not give such a good light as the oil lamp.

Chas. L. Barclay writes :—"Can you tell me where I can procure a lantern transparency of 'The fountain of Trevi,' in Rome ?"

A. Burns writes :—"Can you advise me of a good form of glue or paste for using when binding transparencies? I have tried gum, but the paper binding comes off after a time." *Answer.*—Paste is the best mountant. A good receipt is as follows :—Place half a quarter of flour in a saucepan, with a little water, stir well in order to break all the lumps, after which add two quarts of water, and boil until it is thick. Care must be taken that it be stirred often, to prevent it from lumping and burning. The addition of an ounce of powdered alum will improve its keeping qualities.

J. S. R.—1 Ten cubic feet of gas should be sufficient for (a blow-throught jet) two hours' duration. 2. We shall be very pleased to see it. 3. Later on.

Facile.—Messrs. Fallowfield now supply this camera fitted with a finder ; if you send it to them you can doubtless have one fitted.

Would-be Exhibitor asks :—"1. Please tell me the best firm from whom to purchase a complete dissolving view outfit. As I know very little about the instrument, I do not want to buy a second-hand one. 2. Where can I get a few practical lessons in its management ?" *Reply.*—We cannot recommend any one firm in preference to another, but if you consult our advertising pages, you will find several from whom you can obtain what you require, and who will be pleased at the same time to give you the desired information.

One in a Fix writes :—"Some weeks ago I made some very fine negatives with a detective (at least they made pleasing lantern slides), and on one of our brightest days lately I made some more exposures under similar conditions, and used the plates of the same make, but cannot get such good results as the previous lot. I send you per post a negative and a transparency of the last lot tried, and also a silver print from one of the negatives taken a few weeks ago. Please say in your 'Notes and Queries' columns where the fault lies." *Answer.*—The paper print is very good, but the negative received is decidedly under exposed. When making exposures you must allow for the light, the actinic force of which is not now so strong as it was a month or so ago.

Masks (Oldham).—A Robinson trimmer will answer your purpose for cutting out circular masks ; it consists in a sheet of metal having a circle of the desired size cut out of it; this is laid upon the paper, from which with one sweep of the cutter a circle may be cut out. The cutter is a small sharp steel wheel mounted at the end of a handle.

Subscriber.—The suggestions you make about a support to the fronts of a lantern are not practicable. A better means has been adopted by Mr. J. H. Steward, of 406, Strand.

Condenser.—See article in our number for July 15.

Wilfred Brentwood.—The "Beacon" is published in America. The address, Tribune Buildings, Chicago, will find them.

Irenæus writes :—"1. May I have the address of Mr. Geo. Smith, the writer of the articles on lanterns and accessories ? 2. Is the cat's-eye dissolver for the single lantern protected by registration or patent ? 3. What is approximately the cost of five years' protection for a mechanical contrivance ?" *Reply.*—1. 26, Colebrook-row, Islington, London, N. 2. If you mean the Iris diaphragm, it is not patented. 3. Provisional patents hold good for nine months, and will cost one pound ; four years' protection will cost four pounds, provided you take out your own patent.

Received.—Particulars referring to the lantern meetings of the Manchester Amateur Photographic Society.

R. H. C.—Thanks for list sent.

C. E. G.—We replied by post.

Amateur (Louth) asks :—"1. Will a 4ft. 2in. wick give a better light than a 4ft. 1½ in. wick, both made W shape ? Is this considered the best style of oil lamp ? 2. Where can I get a three lens condenser, and must the lantern be reconstructed to take the third lens further from the light ?" *Answer.*—1. Yes, the wider the wicks, the greater the illumination given. 2. Mr. W. C. Hughes, Kingsland, we believe makes triple condensers. The lamp may have to be withdrawn from the condensers, but no other alteration will be necessary.

N. Z. writes :—"How are compressed gas cylinders filled ? Can the operation be done non-professionally, say by hand hydraulic pump or otherwise ?" *Reply.*—Certainly they can, but the pump for this purpose would be expensive, unless our correspondent is an engineer and can make it for himself. The pressure required is enormous.

Rev. F. Hardwick.—Thanks, it will do for the next number.

H. M. Hastings.—The experiment, which is very pretty, is inserted in the present number. Many thanks for it.

Amateur (Derby).—The chimney for the lamp you describe can be obtained from Mr. W. C. Hughes, of Kingsland.

Mason (Dublin).—Kept out for want of space.

R. W.—We should think from £5 to £6 complete if 20ft. square.

THE following recreative lectures have been arranged by Dr. Fleming, and will be delivered at Cleveland and Wardour Halls in connection with the West London Mission. Cleveland Hall: Thursday, Nov. 21, "Our Teeth, How they Come," Dr. Geo. Cunningham ; Thursday, Nov. 28, "Our Teeth, Why they Go," Dr. Geo. Cunningham. Wardour Hall: Tuesday, Nov. 19. "Niagara," Dr. Fleming ; Tuesday, Nov. 26, "Oliver Cromwell," Mr. Moulton. Each lecture is illustrated with lantern slides.